DOCUMENT RESUME

ED 345 514 FL 020 180

AUTHOR Hieke, A. E.
TITLE Toward a Keyboard-Compatible English Phonetic Alphabet for ESL.
PUB DATE 92
NOTE 16p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *English (Second Language); *Keyboarding (Data Entry); Oral Language; *Phonemic Alphabets; *Phonetic Transcription; *Typewriting
IDENTIFIERS *International Phonetic Alphabet

ABSTRACT

A discussion of phonetic transcription looks at the weaknesses of the International Phonetic Alphabet (IPA), a cumbersome system to use with typewriter and computer keyboards, and offers an alternative. It is noted that the IPA, a system of symbols devised for handwritten transcription, is rarely used by second language teachers or instructional materials writers for explanatory or instructional purposes despite the need for such a tool. It is then proposed that, with a few slight changes, natural English speech can be transcribed with ease, speed, and efficiency if the system uses the standard keyboard, all common symbol uses are limited to a single stroke, lower case letters are used for all of the basic phonemes, and the primary rest position (asdf/jkl;) is reserved for the most frequently used symbols. The proposed system is outlined briefly, its potential for clearly and adequately representing dynamic speech features is reviewed, and a sample passage using the new symbols is presented. A list of 16 references is also included. (Author/MSE)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED345514

# Toward a keyboard-compatible English Phonetic Alphabet for ESL

A. E. Hieke

University of Nevada, Reno

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

A. E. Hieke

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A. E. Hieke

Department of English

University of Nevada Reno

Reno NV 89557-0031

(702) 784-6630; Fax: 702-784-6266

FL 020 180

BEST COPY AVAILABLE

ABSTRACT

This paper points to the weaknesses of the IPA (International Phonetic Alphabet), a system of symbols devised for handwritten transcription and hence highly cumbersome to use in an age of typewriters and computer keyboards. Although second language education programs in the U.S. focus more and more prominently on spoken language competence, due to its shortcomings the IPA is rarely used by teachers or materials writers for explanatory or instructional purposes despite the definite need for such a tool.

The paper then suggests how with a few slight amendations natural English speech can be transcribed with maximal ease, speed and efficiency if the system makes do with what is on the standard keyboard, if all common symbol uses are limited to a single stroke, if lower-case letters are used for all the basic phonemes, and if the primary rest position (asdf/jkl;) is reserved for the most frequently used symbols. The paper concludes with a brief overwiew of how the proposed system can clearly and adequately represent dynamic speech features. A sample passage utilizing the new system is appended.

# Toward a Keyboard-compatible Phonetic Alphabet for ESL

To suggest a change in a well established convention such as the International Phonetic Alphabet (IPA) can be problematic and is likely to encounter initial resistance. However, it is clearly the case that the established conventions to transcribe American English are quite awkward, principally because they include numerous nonstandard, handwritten forms. Any updating, therefore, is really more than mere cosmetics.

Experience has shown, moreover, that creating symbols as special functions on computers can be just as cumbersome as entering nonstandard symbols in the text by hand. Often, extra strokes on the keyboard are required, and then the symbols work only on some printers, so that special computer programming does not really offer a viable solution. But by introducing just a few changes, the nonstandard symbols can be made uniformly compatible with modern keyboards and hence standard printers. To preserve their identity and assure their recognition even by practitioners unfamiliar with the change, furthermore, in most instances even some feature of their former shape can be retained, as will be shown below.

At a time when competence in the spoken language is becoming a prominent objective of many modern second language programs (cf. Murphy 1991 for a discussion of the new goal structure), a modern transcription system constitutes an important teaching and learning tool. It follows that an updated and keyboard-compatible English Phonetic Alphabet (EPA) should be readily available to ESL practitioners--as well as materials writers and textbook publishers, of course. Indeed, it is probably the case that if the IPA in its original as well as its modified forms were not so cumbersome to use, many more practitioners would have been using at least broad transcription as a classroom tool all along. Unfortunately, the notion that the representation of dynamic speech by means of a phonetic alphabet is quite complicated and open only to those with considerable training in linguistics is widespread by now.

A more substantive argument would be to retain the conventional transcription system just to adhere to familiar linguistic conventions or to dictates of universality and thus comparability. But there is absolutely no compelling need for ESL as a discipline in its own right to subordinate its priorities to those of another discipline. Why should ESL practitioners be burdened with a large symbol inventory for representing sounds in all languages (the original ambition of the IPA) when their primary focus is on the phonology of English?

Even those engaged in linguistic research now initiate modifications in the IPA for the sake of computer-compatibility and let that override other considerations (cf. 'Klattese' as adopted, for instance, for ASR (Automatic Speech Recognition) work [Klatt 1980]). Modifications of this kind are considered justified--in fact, necessary--whenever interlingual considerations are not an issue. The proposed EPA clearly qualifies and, incidentally, involves only a limited number of moderate changes, as the following shows.

Not only are the majority of the IPA symbols practically superfluous for immediate ESL concerns, but more significantly, many IPA conventions--no matter how important they might be for linguistic theory--are downright misleading for ESL and so prove to be more confusing than helpful in second language classrooms. Tense vowels, for instance, are normally represented in English without the accompanying offglide. This feature and numerous other equally predictable ones are then captured later in the grammar by a single umbrella rule. For linguists, this solution is actually considered a more elegant formulation from a theoretical point of view.

For ESL/EFL learners, on the other hand, each specific occurrence of an offglide must be marked following the Trager/Smith convention (Trager and Smith 1951). This convention is observed not only to reinforce pronunciation, but more sig-

nificantly to demonstrate how offglides behave under syllabic restructuring. The resultant resyllabication is a highly prevalent process in American English speech (cf. the dynamic speech realization of try again and go under below) and turns out to be a crucial contributor to fluency.

Thus a significant difference in representing dynamic speech affects the canonical shape of syllables, showing marked changes from the traditional citation form representation. It so happens that the pervasive process of Linking in its various manifestations of Consonant Attraction (cf. Hieke 1984; 1987; 1989) has long been simply overlooked in phonetic theory as a mere performance feature. Yet it radically alters the canonical shape of dynamic (as opposed to citation form) speech, and together with a number of other speech dynamic processes, is a substantial factor in the generation of fluent speech; cf. far and away in its dynamic form (with syllable divisions marked by a period); /fa.ren.də.wey/; try again as /tra.yə.gen/; go under as /go.wən.dər/; even the morphologically determined citation form second+ary as /se.kən.de.ri/ (note the resyllabified /d/!); (for a discussion of absorption processes in English dynamic speech, cf. Bygate 1987; Dalby 1986; Dickerson 1989; Kaisse 1985; Koster 1987; Morley 1987; Selkirk 1981; Womack and Bernstein 1990).

The important objective of any modification in the system in order to transcribe natural speech with maximal ease, speed and

efficiency must include the following factors:

>to make do with what is on the standard keyboard
>to limit all common uses to a single-stroke
>to use lower case letters wherever possible
>to reserve symbols on or near the asdf/jkl; primary rest position for very frequently used symbols.

For ease of transition (and for easy recognition by those not familiar with the amended system) it is also desirable to choose symbol substitutions by how closely they retain sufficient traces to the former handwritten forms. Finally, in order to allow refinements in the system or to approximate a narrower phonetic representation, the system should also

>reserve capital letters for strongly stressed vowels
>reserve capital letters for syllabic consonants (such as the nasals and the 'wrly's')
>mark syllable divisions by a period
>mark ambisyllabicity by dashes enveloping the critical sound
>use [/] to indicate a rising terminal
>use [\] to indicate a falling terminal
>use [ ] to indicate nonrelease
>use [>] to indicate retraction
>use [<] to indicate fronting
>use square brackets to indicate other feature specifications.

The conventions listed here are capable of capturing a host of absorption phenomena including assimilations and reductions, important aspects of imparting information about the parameters of dynamic speech, (cf. the literature cited above), but it would exceed the present scope to give more than the few suggestions listed.

## I. VOWELS, SEMIVOWELS, GLIDES, DIPHTHONGS.

For reasons already cited, the proposed scheme adopts the Trager/Smith convention for tense (offglided) vowels in English. Together with some other slight adjustments, this actually results in a more streamlined and simplified vowel configuration for relatively broad transcription needs, as the vowel chart below demonstrates. Adding the semivowels /y/ and /w/ to front and back vowels, respectively, is not only justified because it accurately records the non-pure character of such vowels in English, but much more importantly to allow dynamic speech representations where the offglide is regularly resyllabified and hence associated with the onset of the following syllable whenever that contains a vowel in initial position.

The advantage of proceeding in that manner lies in how accurately and realistically speech dynamic representations of running text can be shown. Thus in fast speech (an unfortunate

misnomer as it implies faster than perfectly normal speech with the usual articulation rate), syllable-final offglides are commonly linked to immediately following initial vowels of the next syllable (cf. Hieke 1984; for examples cf. above). The importance of linking, moreover, cannot be stressed enough since it is a highly common process in both casual and deliberate speech (Hieke 1991). Linking consequently deserves a prominent role in teaching strategies for producing fluent speech: the visual cue in form of a dynamic speech representation showing such resyllabication is therefore very conducive to correct and lasting learner production.

Listed in the order they can be entered in the standard vowel quadrangle schema according to 'front/central/back points of articulation and 'high/mid/low' manner, the following distribution pertains:

| Tense vowels: | front | back |
|---|---|---|
| | /iy/ beat | /uw/ boot |
| | /ey/ bait | /ow/ boat |

The corresponding lax vowels can therefore quite simply be represented without the offglide, and so require no other symbol. Therefore, there is no longer the need for the 'open o', or the 'printed I/E/U':

Lax vowels: /i/ fill /u/ full

/e/ fell /o/ fall

The remaining symbols for the 'digraph' and the 'schwa', can be substituted as follows:

/=/ (where the digraph notion is represented in mnemonic fashion by two lines), and

/;/ (the dot representing the notion of 'centralized')

Although these two substitutions are the least well motivated, they constitute the best choice from the point of view of maximal frequency and were chosen accordingly.

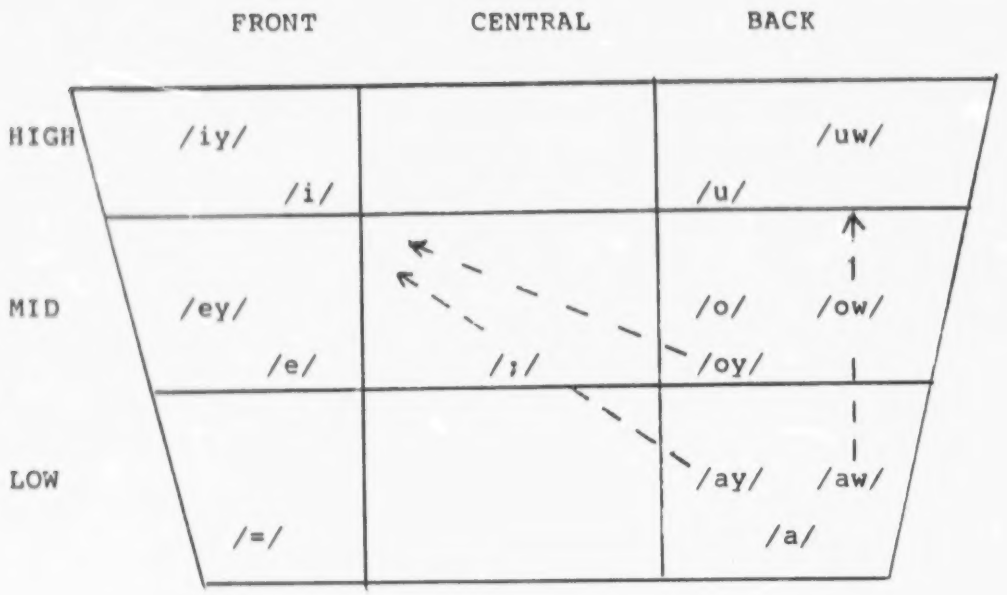
Finally, the diphthongs are represented, akin to the tense vowels, by means of two symbols to reflect the articulatory movement:

/ay/ buy

/aw/ bough

/oy/ boy

The entire scheme can be represented on one vowel quadrangle:




II. Consonants

Again, consonants are listed according to conventional point and manner of articulation representations. It is unnecessary to list the entire chart; the following pertains only to consonants for which a change is proposed:

| | | |
|---|---|---|
| /0/ ether | /x/ shin | /c/ chin |
| /q/ either | /Z/ azure | /j/ gin |

Here it should be noted that the affricates simply lack the 'hacek' but are otherwise the same, that the 'eth' is close to the original symbol in that the /q/ approximates a flipped-down version of it, and that, as an exception, a capital letter is used for the /z/, but it is extremely rare in English (also, most

of these symbols will be found to represent other sounds in the original IPA--but not sounds ever found in English, so that there can be no confusion). Note, in addition, the use of the 'tilde' to represent the /n/, viz.:

/~/ velar n , viz. /sin/ sin vs. /si~/ sing, /=~g;r/ anger vs./=~k;r/ anker

(where velarization is predictable and obligatory)

Note, finally, the additional notation conventions for

-n- etc. = ambisyllabicity, e.g. /begi-n-xr/ beginner (where the nasal bridges both syllables and shares in both), and

. = syllable boundary (esp. to show the results of linking, e.g. /=.tol/ from /=t.ol/ at all, as well as /hor-x-uw/ horse shoe from /hors.xuw/. etc. where assimilation and the subsequent degemination ultimately result in ambisyllabicity instead of a hard syllable boundary at that point.

A short passage in the proposed system follows to illustrate what the EPA might look like (excerpted from Dunbar and Hieke 1985: Building Fluency in English). The change-over--which, incidentally, involves no more than about a dozen symbols all in all--will, of course, affect only those practitioners already familiar with transcription conventions, who would indeed have to undergo slight retooling in this respect. Indications are that a

great number of practitioners today would learn the system for the first time, instead, and it stands to reason that first-time aquirers would find the newly adopted symbols no more arbitrary than the old one.

/mis kr=ndL livz ;lown\ /iyq;r xiy now lo~g;r h=z eniy f=miliy or qey h=v muwvd ;wey tuw ;n;q;r sidiy\ /b;t xiy d;z nat siym tu layk k;mp;niy eniywey\ /=t liyst now wan ev;r vizits h;r--m;c les iyv;n nowd;s;z h;r\ /diypend;b;l =z ; klak--=t sevN fordiy evriy morni~--mis kr=ndL liyvz q; ;partm;nt haws in q; krawd;d ind;striy;l sekxN klows tu q; hart ;v q; sidiy =n h;riyz tu h;r b;s\ /xiy w;rks dawntawn in ;n owldf=x;nd ofis =z ; bu]kiyp;r\ /; p;zixN xiy h=z held qer for q= l=st eytiyn yiyrz\

Where a strictly speech dynamic transcription is desired, the text could be fleshed out as the excerpt below indicates:

/mis.kr=~.d-L-iv.z;.lown\ /iy.q;r.xiy.now.lo~.g;r.h=-z-e.niy.f=.mi.li.yor.qey.h=v.muwv.d;.we.yin.tu.w;.n;.q;r.si.diy\ /b;t.xiy.d;z.n;t.siym.tu.lay]k;m.p;.ni.ye.niy.wey\

REFERENCES

Bygate, M. (1987). Speaking. Oxford: Oxford University Press.

Dalby, J. (1986). Phonetic structure of fast speech in American English. Bloomington: Indiana University Linguistics Club.

Dickerson, W. B. (1989). Stress in the speech stream: The rhythm of spoken English. Urbana: University of Illinois Press.

Dunbar, R., & Hieke, A. E. (1985). Building Fluency in English: Conversation Management. Englewood Cliffs, NJ: Prentice-Hall.

Hieke, A. E. (1984). Linking as a marker of fluent speech. Language and Speech, 27(4), 343-354.

Hieke, A. E. (1987). Absorption and fluency in native and non-native casual English speech. In James, A., Leather, J. (Eds.). (1987). Sound patterns in second language acquisition (pp. 41-58). Dordrecht, Netherlands: Foris Publications.

Hieke, A. E. (1989). Spoken language phonotactics. Implications for the ESL/EFL classroom in speech production and perception. Language Sciences, 11(2), 197-213.

Hieke, A. E. (1991). On the dynamics of casual and deliberate speech. ms.

Kaisse, E. M. (1985). Connected Speech. The interaction of syntax and phonology. New York: Academic Press.

Klatt, D. H. (1980). Overview in the ARPA speech understanding project (1), in Lean, W. A., (Ed.), (1980). Trendsin speech recognition (pp. 249-271). Englewood Cliffs, NJ: Prentice-Hall.

Koster, C. J. (1987). Word recognition in foreign and native language. Dordrecht, Netherlands: Foris Publications.

Morley, J. (Ed.). (1987). Current perspectives on pronunciation. Washington, DC: TESOL.

Murphy, J. M. (1991). Oral communication in TESOL: Integrating speaking, listening, and pronunciation. TESOL Quarterly, (25(1), 51-74.

Selkirk, E. O. (1980). The phrase phonology of English and French. New York: Garland Publications.

Trager, G. L., Smith, H. L. jr. (1951). An outline of English structure. Norman, OK: Battenberg Press.

Womack, M. M., Bernstein, E. (1990). Speech for foreign students. Springfield, IL: Charles C. Thomas.